LISTING OF THE CLAIMS

The following listing, if entered, replaces all prior versions of the claims in the present application.

1.   (Previously Presented) A source node comprising:

a network interface operable to transmit packets and to receive packets;

a processing unit in communication with the network interface, the processing unit being
   operable to generate a request packet that includes a request to provision a route
   for data packets, wherein the request packet includes:

a value indicating the number of nodes included in the route;

a value indicating the number of rings included in the route;

a sequence number for each node in the route with respect to the source node;

an identifier for a destination node; and

an identifier for each node in the route.

2.   (Original) The source node of claim 1, wherein the request packet further includes:

a value representing the bandwidth required to establish cross-connects along the route.

3.   (Original) The source node of claim 1, wherein the identifier for each node in the route is included in a route subfield, and the route subfield includes:

a network element identifier for each node;

a port identifier for each node; and

a timeslot for each node.

4.   **(Currently Amended)** The source node of claim 1, wherein the network interface is a **Bi-Directional Line-Switched Ring** (BLSR) network interface.

5.   (Original) The source node of claim 4, wherein the source node is further operable to broadcast the request packet using the BLSR network interface.

6.   (Original) The source node of claim 1, wherein the source node is further operable to reserve bandwidth for broadcasting the request packet.

7.   **(Currently Amended)** The source node of claim 1, wherein the source node is further operable to receive a response packet, wherein the response packet includes:

[[a]] **the** value indicating the number of nodes included in the route;

[[a]] **the** value indicating the number of rings included in the route;

~~an~~ **the** identifier for [[a]] **the** destination node;

[[a]] **the** sequence number of each node in the route with respect to the source node; and

~~an~~ **the** identifier for each node in the route.

8.   (Previously Presented) The source node of claim 7, further comprising a local data structure that includes information regarding a route with the least cost.

9.   (Original) The source node of claim 8, wherein the source node receives a plurality of response packets and stores information regarding the route with the least cost in the local data structure.

10.   (Original) The source node of claim 9, wherein the source node broadcasts a packet including information regarding the route with the least cost.

11.   (Original) The source node of claim 10, wherein the request packet further includes a timeout value, and the source node is further operable to generate a connect packet, wherein the connect packet includes:

the value indicating the number of nodes included in the route with the least cost;

the value indicating the number of rings included in the route with the least cost;

the identifier of the destination node; and

the identifiers for each node in the route with the least cost.

12.   (Original) The source node of claim 11, wherein the source node is further operable to start a timer and broadcast the connect packet when the timeout value has been reached on the timer.

13.   (Original) The source node of claim 9, wherein the source node is further operable to generate a disconnect packet, wherein the disconnect packet includes:

the timeslot of a node included in a route to be dismantled; and

a value indicating the bandwidth required to transmit the disconnect packet.

14.   (Original) The source node of claim 13, wherein the source node is further operable to broadcast the disconnect packet to the route to be dismantled.

15.   (Previously Presented) A destination node comprising:

a network interface operable to transmit packets and to receive packets;

a processing unit in communication with the network interface, the processing unit being

operable to generate a response packet subsequent to receiving a request to

provision a route for data packets, wherein the response packet includes:

a value indicating the number of nodes included in the route;

a value indicating the number of rings included in the route;

an identifier for a destination node;

a sequence number of each node in the route with respect to a source node; and

an identifier for each node in the route.

16.   (Previously Presented) The destination node of claim 15, further comprising a local data structure that includes information regarding a route with the least cost.

17.   (Previously Presented) The destination node of claim 16, wherein the destination node is further operable to transmit the response packet when a route in a received packet has a lower cost than the route in the local data structure.

18.   (Original) The destination node of claim 17, wherein the destination node is further operable to update the local data structure with the route in the received packet when the route in the received packet has a lower cost than the route in the local data structure.

19-20. (Canceled)

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21. (Previously Presented) An intermediate node comprising:

a network interface operable to transmit packets and to receive packets along a route; and

a processing unit in communication with the network interface, wherein the processing

unit is configured to store data in a local data structure that includes route

information regarding a route between a source node and a destination node with

the least known cost;

wherein the intermediate node is operable to receive a request packet, compare route

information in the request packet with the route information in the local data

structure, and transmit the request packet when the route in the request packet has

a lower cost than the route in the local data structure.

22. (Original) The intermediate node of claim 21, wherein the intermediate node is
further operable to update the local data structure with the route in the request packet when the
route in the request packet has a lower cost than the route in the local data structure.

23. (Original) The intermediate node of claim 21 wherein the intermediate node is
further operable to update the request packet with the route in the local data structure when the
route in the local data structure has a lower cost than the route in the request packet.

24-26. (Canceled)

27. (Previously Presented) The method of claim 28, further comprising:

determining bandwidth required to establish cross-connects along the route.

28. (Previously Presented) A method for provisioning a route from a source node,
wherein the source node is operable to communicate with at least one neighboring node in a
network, and wherein packets are communicated along the route, the method comprising:

generating a request packet that includes a request to provision the route for the packets;

and

broadcasting the request packet to the at least one neighboring node, wherein the request

packet includes:

a value indicating the number of nodes included in the route;

a value indicating the number of rings included in the route;

a sequence number for each node in the route with respect to the source node;

an identifier for a destination node; and

an identifier for each node in the route.

29.   (Original) The method of claim 28, wherein the identifier for each node in the route is included in a route subfield, and the route subfield includes:

a network element identifier for each node;

a port identifier for each node; and

a timeslot for each node.

30.   (Original) The method of claim 27, wherein the network is a BLSR SONET network.

31.   (Original) The method of claim 27, further comprising:

reserving bandwidth for communicating the request packet.

32.   (Previously Presented) A method for provisioning a route from a source node, wherein the source node is operable to communicate with at least one neighboring node in a network, and wherein packets are communicated along the route, the method comprising:

generating a request packet that includes a request to provision the route for the packets;

broadcasting the request packet to the at least one neighboring node;

determining bandwidth required to establish cross-connects along the route; and

receiving a response packet, wherein the response packet includes:

a value indicating the number of nodes included in the route;

a value indicating the number of rings included in the route;

an identifier for a destination node;

a sequence number of each node in the route with respect to a source node; and

an identifier for each node in the route.

33.   (Previously Presented) The method of claim 32, further comprising:

generating a local data structure that includes information regarding a route with the least cost; and

storing information regarding the route with the least cost in the local data structure.

34.   (Previously Presented) The method of claim 33, wherein the source node receives a plurality of response packets, the method further comprising:

    comparing the cost of a route in each response packet to a cost of the route in the local data structure; and

    updating the local data structure with the route in one of the response packets when the route in the one of the response packets has a lower cost than the route in the local data structure.

35.   (Original) The method of claim 34, further comprising:

broadcasting a packet including information regarding the route with the least cost from the source node.

36.   (Original) The method of claim 35, wherein the request packet further includes a timeout value, the method further comprising:

    generating a connect packet, wherein the connect packet includes:

        the value indicating the number of nodes included in the route with the least cost;

        the value indicating the number of rings included in the route with the least cost;

        the identifier of the destination node; and

        the identifiers for each node in the route with the least cost.

37.   (Previously Presented) The method of claim 36 further comprising:

starting a timer when a first request packet is broadcast; and

broadcasting the connect packet when a timeout value has been reached on the timer.

38.   (Original) The method of claim 33, further comprising:

generating a disconnect packet, wherein the disconnect packet includes:

    a timeslot of a node included in a route to be dismantled; and

    a value indicating the bandwidth required to transmit the disconnect packet.

39.   (Original) The method of claim 38 further comprising:

broadcasting the disconnect packet to nodes in the route to be dismantled.

40. (Original) A method for dismantling a traffic route in a network, the method comprising:

generating a disconnect packet, wherein the disconnect packet includes:

a timeslot of a node included in a route to be dismantled; and

a value indicating the bandwidth required to transmit the disconnect packet.

41. (Original) The method of claim 40 further comprising:

broadcasting the disconnect packet to nodes in the route to be dismantled.

42. (Previously Presented) A method for provisioning a route with a destination node, wherein the destination node is operable to communicate with at least one neighboring node in a network, and wherein packets are communicated along the route, the method comprising:

receiving a request to provision the route in the destination node, wherein the request includes information regarding a candidate route;

comparing the information regarding the candidate route to information regarding a previous route in the destination node;

determining whether the candidate route has a lower cost than the previous route;

updating the information regarding the previous route in the destination node with the information regarding the candidate route when the cost of the candidate route is lower than the cost of the previous route; and

generating a response packet when the information regarding the candidate route is updated with the information regarding the previous route.

43. (Previously Presented) The method of claim 42, wherein the response packet includes:

a value indicating the number of nodes included in the route;

a value indicating the number of rings included in the route;

an identifier for the destination node;

a sequence number of each node in the route with respect to a source node; and

an identifier for each node in the route.

44.   (Original) The method of claim 42 further comprising:

broadcasting the response packet to the at least one neighboring node.

45.   (Previously Presented) A method for provisioning a route with at least one
intermediate node, wherein the intermediate node is operable to communicate with at least one
neighboring node in a network, and wherein packets are communicated along the route, the
method comprising:

> receiving a request packet comprising a request to provision the route in the intermediate
> > node, wherein the request packet includes information regarding a candidate
> > route;

> comparing the information regarding the candidate route to information regarding a
> > previous route in the intermediate node;

> determining whether the candidate route has a lower cost than the previous route in the
> > intermediate node;

> updating the information regarding the previous route in the intermediate node with the
> > information regarding the candidate route when the cost of the candidate route is
> > lower than the cost of the previous route; and

> adding the intermediate node to the route in the request packet when the cost of the
> > candidate route is lower than the cost of the previous route.

46.   (Original) The method of claim 45 wherein the network is a four fiber BLSR
network.

47.   (Original) The method of claim 46 wherein determining whether the candidate
route has a lower cost than the previous route in the intermediate node includes:

> determining whether the candidate route has a lower cost than the previous route
> > transmitted on a particular fiber in the intermediate node.

48.   (Previously Presented) The method of claim 45 further comprising:

broadcasting the request packet when the route in the request packet has a lower cost than
> the previous route.

49.   (Previously Presented) A method for provisioning a route with at least one intermediate node, wherein the intermediate node is operable to communicate with at least one neighboring node in a network, and wherein packets are communicated along the route, the method comprising:

receiving a response packet in the intermediate node, wherein the response packet includes information regarding a candidate route;

comparing the information regarding the candidate route to information regarding a previous route in the intermediate node;

determining whether the candidate route has a lower cost than the previous route in the intermediate node.

50.   (Previously Presented) The method of claim 49 further comprising:

broadcasting the response packet when the candidate route in the response packet has a lower cost than the previous route; and

updating the information regarding the previous route in the intermediate node with the information regarding the candidate route when the cost of the candidate route is lower than the cost of the previous route.